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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,244	04/12/2004	Jing-Horng Gau	JCLA12737	4067

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EXAMINER	
MONDT, JOHANNES P	
ART UNIT	**PAPER NUMBER**
2826	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/823,244	JING-HORNG GAU
	Examiner	Art Unit
	Johannes P. Mondt	2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☒ Claim(s) *10-17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Amendment filed 7/21/05 forms the basis for this office action. In said Amendment Applicant substantially amended all outstanding claims 1-17. Comments on Remarks are included below under "Response to Arguments".

Claim Objections

Claims 10-17 are objected to because of the following informalities: the wording: "a plurality of second conductive type doped regions formed in the first conductive type shallow well and the second conductive type deep well" should be replaced by: "a plurality of second conductive type doped regions formed in the second conductive type deep well and one second conductive type doped region formed in the first conductive type shallow well". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. ***Claims 1-9*** are rejected under 35 U.S.C. 102(b) as being anticipated by Russ et al (US 2003/0047750 A1).

Russ et al teach (title, abstract, Figure 2 and [0031]-[0039]) a junction diode, comprising :

a first conductive type (p-type) substrate 203 (i.e., the further limitation of claim 2 is met);

a second conductive type (n-type; i.e., the further limitation of claim 3 is met) embedded region $210_1/206_2/205/208/206_2/210_2$ formed within the first conductive type substrate;

a second conductive type (n-type; hence the further limitation of claim 4 is met) epitaxial (hence the further limitations of claims 5 and 6 are met) well 208, formed within the second conductive type embedded region,

wherein the second conductive type well has a dopant concentration smaller than the second conductive type embedded region (see [0033]), and

the second conductive type embedded region surrounds the second conductive type well (Figure 2);

a first conductive type (p-type) doped region 212, formed in said second conductive type well; and

at least two second conductive type (n-type; hence the further limitation of claim 8 is met) regions 210_1 and 210_2, formed in the second conductive type embedded region beside the first conductive type doped region.

On claim 9: the junction diode further comprises a plurality of isolation structures 218 (see [0035]) set between the first conductive type doped region and the second conductive type doped regions.

Allowable Subject Matter

Claims 10-17 are allowed subject to removal of the objections as formulated under "Claim Objections" above. The following is a statement of reasons for the indication of allowable subject matter: closest art found to date is Pequignot et al, in view of Cottrel as cited in the previous office action. However, the second conductive type doped region formed in the first conductive type shallow well in the combined invention by Pequignot in view of Cottrell is *not isolated from the second conductive type deep well* by the first conductive type well and the first conductive type shallow well, but in contrast forms a contiguous region of n-type conductivity with said second conductive type deep well.

In Russ et al as cited in the current office action (see above) *the second conductive type deep well must be identified with a well that does not contain another well of opposite conductivity type*, while this would be required according to line 4 of claim 10.

Other art on an ESD protection device that does show a second conductive type deep well 36 with a first conductive type well 34 within the latter is *Yu (6,407,414)*, but *only one first conductive type doped region* 37; note, however, that in a combined invention by Yu in view of Cottrell *that* second conductive type doped region 38 that is formed in the first conductive type shallow well is indeed isolated from the second conductive type deep well 36 by the first conductive type well 34 and first conductive type shallow well (the latter added according to Cottrell).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

JPM
September 24, 2005